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Worldwide Report

TELECOMMUNICATIONS POLICY, RESEARCH, AND DEVELOPMENT

FBIS FOREIGN BROADCAST INFORMATION SERVICE

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WORLDWIDE REPORT

TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

CONTENTS

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HONG KONG TO LINK INTO CABLE, WIRELESS DIGITAL NETWORK

Hong Kong HONGKONG STANDARD in English 7 Oct 86 Supplement p 2

[Text]

CABLE and Wireless plc took a quantam leap yesterday towards its goal of establishing a global digital highway with the announcement that it will be a key participant in a multi-billion dollar alternative international telecommunications system and service for Japan.

And Hongkong will link into the system — which will ultimately connect with the world's key financial centres, London and New York — alongside Korea, Taiwan, the Philippines, China and other Pacific Basin countries by a further network of submarine cables or private satellite.

What is even more image-building for Cable and Wireless plc, whose shares will be listed on the local stock exchange by the end of the year, is that it is the only foreign participant with a significant equity interest in the consortium formed to carry out the detailed feasibility study for the new telecommunications system.

Its 20-per-cent stake, in fact, equals that of C Itoh which is the third largest trading house in Japan.

Other participants are Toyota Motors (10 per cent); Fujitsu (three per cent); NEC (three per cent); Japanese banks IBJ, DKB and LTCB (15 per cent between them); Hitachi (two per cent); the US-based Pacific Telesis International (10 per cent); Merrill Lynch (three per cent); and sundry other Japanese companies (14 per cent).

Talks about Cable and Wireless plc's participation began more than a year ago and a feasibility study was started last April.

It proved positive and a consortium comprising the above-mentioned companies — called Kokusai Digital Tsushin Kikaku KK — was duly formed to obtain a category 1 licence from the Japanese Government.

Given the quality of the consortium, incidentally, and the fact that the secondary feasibility study that will now be prepared will constitute the only effective tender, the alternative system to the existing KDD one seems assured of getting the necessary Category 1 licence and the various other regulatory approvals.

The broad business plan — worked out in the earlier C Itoh/Cable and Wireless study — is for a leased circuit service via Intelstat and existing Pacific cables by the end of next year with switched services forming phase II, which will begin in 1989 and a full range of digital leased and switched services via PPAC submarine optical fibre cable jointly owned by KDTK (Japan) and Pacific Telecom Cable of the US beginning in 1990 for phase III.

Phase IV will see the connection of Japan with Hongkong and other regional centres.

The consortium is unique in terms of Anglo-US co-operation with the Japanese and provides a potent reinforcement for Cable and Wireless plc's plans for a global digital highway.

It also underlines how serious the governments of Britain, America and Japan are in their policies of liberalisation and privatisation.

Cable and Wireless plc's global highway presently consists of four key elements:

- Mercury — the only all-digital network in Europe;
- PTAT — the planned state-of-the-art submarine fibre optic cable linking the

UK to the US owned jointly by Cable and Wireless and Tel Optik. Nynex, the New York-based RBOC, will purchase Tel Optik subject to necessary judicial and regulatory approvals.

- Cable and Wireless' digital network in the US; and
- PPAC — the planned state-of-the-art submarine fibre optic cable linking the US to Japan (and ultimately Hongkong), owned jointly by Pacific Telecom Cable of the US and the new Japanese consortium subject to acquiring the relevant licences.

Funding details have still to be worked out but the Japanese leg of the global digital highway will probably cost around the US$500 million mark.

In addition to the stature that Cable and Wireless plc indubitedly gains from its inclusion in the new KDTK consortium, it also sheds more light on the rationale behind the recent decision to list its shares on the Tokyo stock exchange earlier this year, followed by Hongkong and various other key world bourses by the end of 1986.

/13104
CSO: 5550/0017

SPAR SIGNS CONTRACT TO BUILD TWO TELESAT SATELLITES

Toronto THE GLOBE AND MAIL in English 18 Oct 86 p B6

[Article by Robert Gibbens]

[Text] Spar Aerospace Ltd. of Toronto has been awarded a $180.5-million contract to build two communications satellites, Anik E1 and Anik E2, for Telesat Canada.

The two dual-band satellites are to be completed by 1989 for launch in 1990. Spar, as prime contractor, can also earn an extra $20.5-million in incentives during the 10-year lifespan of the satellites if certain performance objectives are met.

They are designed for the North American communications market, said Eldon Thompson, Telesat president. Including ground equipment and the cost of launching and insurance, the total cost of the Telesat project is between $450-million and $500-million.

Each of the satellites will carry the equivalent of 56 television channels, and together they will meet Telesat's capacity needs from 1990 to 2000. "We will be launching two of our current satellites at one time, with a cost saving of about 35 per cent," Mr. Thompson said.

Telesat has six satellites in orbit, including one in storage orbit and one to be retired later this year. The company will finance its latest satellite venture through normal commercial sources.

Spar will carry out the design, manufacture and installation of the communications payload at its Ste-Anne de Bellevue plant in Quebec, just west of Montreal, while the RCA Astro Electronics Division of New York-based RCA Corp. will provide the basic spacecraft components. RCA's input will represent about $70-million, and the work of other U.S. subcontractors about $15-million.

The satellites will probably be launched by one of two commercial carriers in the United States, because of their greater experience, Mr. Thompson said.

Don Pollock, Spar president, said the company hopes to find commercial markets abroad for the Anik E-type satellite. It could be suitable for certain Latin American countries, Europe, Nigeria and China. Spar has sold satellite systems to Brazil, and is negotiating with Nigeria and China.

/7358
CSO: 5520/2

BRIEFS

NEW WARSAW TELEPHONE EXCHANGE--As part of the drive to modernize Warsaw's telephone communications center startup engineering work has begun on a state-of-the-art transit exchange located on Francesco Nullo Street. This facility has been equipped with electronic hardware manufactured by the Teletra firm of Poznan based on a French license purchased from CIT-Alcatol. This exchange has 3,000 telephone connections and will serve residents of Warsaw, in addition to working in tandem with the major subscriber exchanges of central government offices such as the Sejm, the Office of the Council of Ministers, and the Planning Commission. Tadeusz Witold Mlynczak, chairman of the Democratic Party Central Committee, received a briefing on this new telephone exchange and on plans for the Warsaw telephone system in the immediate future. [Text] [Warsaw ZYCIE WARSZABY in Polish 17 Oct 86 p 2] /9738

AUTOMATED DIRECT-DIAL PHONE SYSTEM--Kielce will soon become the seventh city in Poland to have an automated international and intercity long distance telephone exchange system called ACMM [automatyczna centrala miedzymiastowa i miedzynarodowa]. The system is scheduled to go into service during the first week of October 1986. With the help of this advanced technology, the residents of Kielce, Skarzysko, Starachowice and other cities in Kielce Voivodship will be able to place direct-dial calls to about 1500 places inside Poland as well as 14 countries, including Belgium, Greece, Hungary and the USSR. Callers can gain access to ACMM by dialing "0". Information pamphlets about international and intercity dialing (30 thousand copies are being printed at a price of zl 50 each) are already on sale at the Kielce 1, Skarzysko 5, and Starachowice 1 post offices. For example, a one-minute call to Greece will cost around zl 110; a call to Hungary for the same length of time will cost half that toll. [Text] [Kielce SLOWO LUDU in Polish 23 Sep 86 p 5] /9738

CSO: 5500/3003

NATION'S FIRST CABLE TV NETWORK NEARS REALITY

Hamilton THE ROYAL GAZETTE in English 23 Sep 86 p 1

[Text]

Bermuda Cablevision is at last on the verge of establishing Bermuda's first cable TV network.

The company has secured a $5 million loan and received copyright clearance to show up to 21 channels on a cable system, according to company president Mr. Gavin Wilson.

And after years of unfulfilled promises and stumbling blocks, the company should be ready for ground-breaking by the beginning of December.

Mr. Wilson said yesterday he will tell the company's 570 shareholders at an October 6 general meeting in the Chamber of Commerce offices where the company stands.

"Certain events have taken place which mean we can now go back to the shareholders," he said.

"We have secured a $5 million loan from the First Bank of Minneapolis," he said. "And we now have an agreement with the the Motion Picture Association of America which means we can now show the programming of copyright holders represented by the MPAA.

Mr. Wilson said the agreement gives the company the rights to show the programming of 21 channels — 11 above the number required by Government to operate a cable company locally.

Mr. Wilson has also negotiated the rights to show two cable channels already available in Bermuda through DeFontes Broadcasting — *ESPN* and *Cable News Network.*

Mr. Wilson said this should not create any problems because the rights are non-exclusive.

"The biggest thing is to have the agreement with the MPAA," he said. "No similar agreement exists anywhere else. Not in Mexico, not in Canada and not in the Caribbean or anywhere else."

He said the MPAA had told him the directly-negotiated agreement was a precedent in the Western Hemisphere and could pave the way for other agreements in the Americas.

It is believed to be modelled on an agreement negotiated between a Dutch company. The MPAA receives two percent of the company's revenues and distributes them to its members.

Bermuda Cablevision was invited by Government in October, 1985, to submit a bid to operate a cable TV company in Bermuda providing it had copyright clearances, similar operating standards to US and Canadian companies and a solid financial base.

With the copyright clearances and the funding from the American bank, Mr. Wilson now appears close to fulfilling his aim.

Mr. Wilson said last autumn he hoped to have the system on line by this summer.

He said yesterday: "We expect to have all our ducks in a row by November 15.

"We are looking to start ground-breaking by the beginning of December," he said. "But this is a loose target. We've got to be flexible. You never know if a natural disaster is going to strike."

Mr. Wilson said the company has complied with Government's major requirements.

Unlike the company's earlier efforts to establish a cable network, Mr. Wilson said Government has been kept up to date on developments and the two bodies have worked closely together.

"We have a nice line-up," Mr. Wilson said.

/9274
CSO: 5540/014

GOVERNMENT TURNS DOWN PROPOSED CABLE TV SCHEME

St Georges THE GRENADIAN VOICE in English 6 Sep 86 p 3

[Text]

Government have turned down a proposal of a company known as Payvision Ltd. to establish a cable T.V. Station in the state to serve patrons with a minimum of 8 channels initially - including ABC, NBC, CBS, CNN (News) and, possibly, BBC. and one channel for public use.

The proposal included offers of free cable connections and free T.V. sets to such places as schools, hospitals, fire and police stations and homes for the aged.

Writing the Prime Minister in January, the company which provides cable television service to certain other islands in the caribbean, the company requested a 10 year income tax holiday, exemption from import duty for all equipment and materials and a 15 year exclusive cable television franchise with two five year renewable options.

In return the company offered the Government the first Right of Refusal to purchase the system after the fifteen year or subsequent period, a reinvestment of 20% of Payvision Ltd.'s net profits into the Grenada economy, 5% equity to the Grenada Government or 5% of the net profits per annum and payment of rental of US$5.00 per annum for every pole used as part of the cable system.

The company said that in conjunction with the Ministry of Education it would bring educational programmes to the schools as deemed necessary by the Ministry.

The charge to residents for the service was quoted as US$20. pert month plus a one time installation fee of US$10.00 and a US$20.00 refundable security deposit.

The company said it would post a performance bond in the sum of US$50.000 to guarantee startup within 120 days of the date of execution of the agreement.

/9274
CSO: 5540/015

TV NEWS EXCHANGE PROGRAM WITH BARBADOS CANCELLED

Port-of-Spain TRINIDAD GUARDIAN in English 11 Oct 86 p 1

[Article by Jerry Johnson]

[Text]

THE NEWS exchange programme between Barbados and Trinidad and Tobago has been cancelled because Trinidad and Tobago Television (TTT) was not getting value for its money.

So said TTT's General Manager, John Barsotti, when contacted yesterday. The programme started in January this year as a test of intra-regional news exchange and was sponsored by INTELSAT. Jamaica promised to be part of the exchange, Mr Barsotti disclosed, but never joined.

TTT, however, went ahead with the Barbados exchange until October 3 when INTELSAT discontiuned the sponsorship, saying it had not heard from the other Caribbean countries. Mr Barsotti said TTT was prepared to continue until October 10 but the company was not getting quailty programmes from Barbados.

Lennox Worrell, General Manager of TEXTEL, called the removal of the news exchange programme unfortunate and a retrograde step, especially when public opinion was on the side of increased local and foreign content on television.

Mr Worrell spoke of some Lesser Developed Countries which were exposed to 24 hours of cable and the deleterious effect it was having on local consumption. He said advertisers there were no longer promoting local goods. Instead, they were simply packing their shelves with the foreign products that consumers are bombarded with all day.

Striking A Balance

TEXTEL's General Manager said that the argument was not to do away with foreign content in the media but to strike a balance with increased local and foreign programmes. Mr Barsotti said TTT also supported that contention and he hoped the matter would be approached seriously at the next Caribbean Broadcasting Union meeting in November.

He said he was very willing to be part of the exchnage again. But it must involve at least three countries and the quality of the programming, including TTT's, must be up to standard. With the help of TEXTEL which has done its part, Mr Barsotti said, it was now easy to exchange quailty programming like the Steelband Music Festival. Indeed, Mr Barsotti disclosed, there was an individual from Jamaica who was interested in the festival. But of course, Mr Barsotti added, TTT would have first to clear the rights with Pan Trinbago.

/9274
CSO: 5540/016

LUSINCHI EASES REGULATIONS, BROADCASTERS COMMENT

PA252139 Caracas Television Service in Spanish 0001 GMT 25 Oct 86

[Text] Beginning today, television stations will be able to enter contracts for satellite broadcasts directly, without going through CANTV [National Telephone Company of Venezuela]. The announcement of this total liberalization of satellite broadcasts was made by Venezuelan President Jaime Lusinchi in an address to television station directors.

[Begin recording] [Transport Minister Pedro del Moral; in progress]...to the Venezuelan Government's desire to open all kinds of possibilities and freedom so Venezuelan television will include international coverage, especially in the Caribbean, which is in Venezuela's sphere of influence, and in the border zones, which play a key role in development. That is the government's sentiment. We believe it is very important to the social and economic growth of the country.

[CANTV President Jose Luis Espinel] This will make it possible, as announced earlier, to have television reception antennas at home for private use. Also beginning today, private television companies will have that same opportunity. In this context, Channels 2 and 4, as well as the state television stations, will be able to receive television signals via satellite using their own equipment, whether by purchasing or leasing satellies. They will also be able to use the telephone company's system.

[Channel 2 Director Eladio Lares] The measure the president has adopted is important for the industry. We, as Radio Caracas Television and as part of the industry, were eager to see it go through. Radio Caracas was the first to engage in this activity. As you recall, our receivers allowed Venezuela to see men walk on the moon. We were the first to bring the world to Venezuela. As a representative of the television industry,I believe this is very important. I am proud of this historic step.

[Channel 4 Director Jose Rafael Revenga] This implies overcoming the technical backwardness or technological isolation we were in. Our windows to the world were closed. The president has allowed us to open them.

[Reporter] From an eonomic stand point, will this not be a burden to the television stations?

[Revenga] We do not have specific estimates. However, I believe the costs will be comparable to those established by CANTV. [end recording]

/6091
CSO: 5500/2007

BRIEFS

HOURLY NEWS BULLETINS--Radio Pakistan will broadcast hourly news bulletins from 0600 to 2300 [0100 to 1800 GMT] beginning tomorrow, Saturday [1 November], to keep the people informed of the affairs. A total of 12 Urdu and 6 English news bulletins will be broadcast. The number of news bulletins in Punjabi, Sindhi, Pashto, and Baluchi languages is also being increased from three to four. [Text] [Karachi Domestic Service in Urdu 0200 GMT 31 Oct 86 BK] /9738

CSO: 5500/4703

FUNDS GRANTED TO IMPROVE RADIO TRANSMISSIONS

Kaduna NEW NIGERIAN in English 25 Sep 86 pp 1, 3

[Article by Chris Dada Thomas]

[Text]

FEDERAL Government has approved a special grant of 7.74 million Naira for the Federal Radio Corporation of Nigeria (FRCN) for the rehabilitation of its transmitors and other facilities.

The Director-General of the corporation, Malam Dahiru Modibbo, said in Lagos yesterday that as soon as the funds were released it would be used to import spare parts needed to improve the services of the establishment.

Malam Dahiru, who was briefing the Minister of Information and Culture, Mr. Tony Momoh who was on a working visit to the FRCN, said more than a half of the corporation's equipment had broken down while those functioning operated at very low capacity.

The five main transmitters of the External Service were shut down due to lack of spare parts while the education service transmitters had been off the air for nearly two years.

The director-general said FRCN as currently constituted had tremendous potentials which had not been exploited.

He said if the corporation had been given the necessary facilities and the intentions of the FRCN decree directly understood and applied, it would have had greater impact by now than it had been able to achieve.

Malam Dahiru said each of the 15 Nigerian languages service and four English services in the zones could have operated for 18 20 hours daily.

He said the corporation priority request for the next development plan were to re-equip existing stations, provide multi-channel capacity for both Enugu and Ibadan to bring them up to the level of Kaduna.

/9274
CSO: 5500/18

MODERNIZATION DIGITIZATION OF COMMUNICATIONS SEEN 'TOO COSTLY'

Lagos THE AFRICAN GUARDIAN in English 9 Oct 86 pp 21, 22

[Article by Chukwuemeka Gahia and George Ola-Davies]

[Text]

PUTTING a call through by spinning the phone dial with the forefinger is not quite the style currently judged to suit a Nigeria on the move. Nobody is saying, for now that this method of using the telephone — referred to as the analogue system — is old-fashioned as such.

Rather, Nigeria's communication planners think it is nothing compared to the digital system, in which only numbered buttons are touched by subscribers to make calls. They are convinced that the digital system is more efficient. And come January, 1987, Nigeria will join Senegal and Cote d'Ivoire (Ivory Coast) as the only countries in West Africa that have switched over to the digital system.

Work has started, in fact, pilot projects in Lagos, (Odulami primary centre, Iponri, Ikeja) Ibadan (at Bodija), and Maiduguri for the system expected to gobble up ₦464 million . Sources say the ₦78.4 million so far spent on the projects is part of a ₦500 million loan. The Nigerian Telecommunications Company (NITEL) took from the ITT in 1985 to cover execution of old and new communications projects handled by the multinational's local partners.

With this kind of money earmarked for expenditure at a time like this, the analogue-to-digital switch has come under scathing scrutiny. Skeptics range from experts who think it would amount to putting new wine into an old bottle, to the Nigerian Society of Engineers (NSE) which worries that government is literally throwing money at technological fancies. The NSE has sent a strongly worded letter to the Ministry of Communications protesting that the cost of the scheme is colossal and cannot be justified on cost-benefits grounds.

The letter says the engineers' anger partly stems from the fact that the scheme requires additional interface equipment whose costs could wipe out expected advantages, apart from compounding existing maintenance and training problems. It adds that there is little economic sense in Nigeria investing huge sums on the new technology when producer countries like the US, Japan, Britain and West Germany still use analogue system "for more than 70 per cent of their national telecommunications systems."

The engineers want the government to put its money on the existing analogue system, which, they claim, is yet to be hooked throughout the country. They say that existing telephone facilities have not even been maintained properly or "utilised to their full capacities."

What they want the NITEL to do therefore is to deliver on its earlier promise to take inventory of telephone exchanges which were purchased, but are yet to be installed under the first phase of the new telecommunications development programme. But they are afraid that their call may turn to be water poured on the back of a duck. NITEL's performance in telecom-

munications is hardly a success story. It was not long ago that it tried unsuccessfully to float a communications balloon (it was actually a trial balloon) project called Aerostat. By the time the project flopped, it had guzzled ₦100 million in installation fees alone. Another pet project — an idea called Domestic Satellite System (DSS) — was unable, in nine years, to meet the planned objective of up-grading network television programming.

This time around, NITEL is trying to show some caution. It is not planning to phase-out the analogue system altogether. It is going to merge the two networks — the analogue and the digital — at least, for some time.

Plans for the digital system began in January, 1985 when government set up a committee headed by Chief P.S. Kentebe, former NITEL general manager (southeast zone) to map out a "strategy for the digitalisation of the national telecommunications newtwork." The committee got a month to carry out the job, but actually took 18 months to write a report, which was submitted only recently.

It angered Communications Minister, Col. Tanko Ayuba, who regretted that the committee not only delayed the report, but also allowed its findings to leak before government even got to know about them. He said this caused a stir among firms looking for contracts, possibly leading to lobbyings by well-connected parties.

ALL the same, the administration is impressed by the advantages of the digital system (based on the Pulse Modulations-PCM-technique (which converts the analogue mode into a digital form). Unlike the analogue system, restricted to one unit say, the telephone; the digital system offers a wide range of features, including a computer-controlled unit. When equipped with digital terminals, the unit allows users to transmit texts, pictures and data in a matter of seconds.

Digital techniques make it possible for two people, conversing thousands of miles apart, to see themselves through a gadget called picturephone. Corporate board meetings, with participants at various locations in the country, can be arranged through a digital process called teleconferencing. In addition, consumers can sit at home and compare prices, if their lines are connected to supermarkets with digital facilities.

THE range of features for voice communication through the digital system include what experts call extension, operation and system units Under the extension features, there are 34 services, including a "night service" that does not operate during the day and the "follow me" mechanism which automatically redirects calls to any place the owner happens to be within a given radius at any given time.

The system features has advantages that include: correct time metering, a fire alarm unit that relates fire outbreaks to lines not in use at the time, and units for monitoring security guards and staff not at their places of work. The operator feature helps to ensure: that in-coming calls are all put on queue, the interruption of a busy line to pass on urgent messages, and that one is able to speak with a different party without the caller 'on-hold' hearing.

In all, the digital system is aimed at integrating communiction services within a single network, involving telephony, all types of data transmission, high speed, telescroping and so on. In contrast to the 110 years old analogue system, digital signals are separated in periodically repeated time slots and each speech direction has a separate channel.

In analogue transmission, the sound that comes from the voice basically travels in the form of waves that become audible at the earpiece of the receiver. It is so named because its electrical waves are a continuous replica of sound waves, and have characteristics similar to them, such as frequency. Analogue connections depend on forms of electro-mechanical switches in exchange offices that link callers.

With the digital system the process is less cumbersome. Its signals — the "O" and "I" of the binary code — are sent as sequences of on-off pulses. Digital transmission also uses optical fibres as a result of its base structure — the PCM and it's immunity to electrical charges. The analogue system, on the other hand, is badly distorted by electrical noise, interference and weak equipment.

The existing analogue system in the country has undergone a lot of changes,

the most important attempt to improve it being government plan in 1975 to increase subscriber lines from 50,000 to 750,000 and replace the switching method with the step-by-step central battery and magnetic system. Contracts for the installation of telephone exchanges in 45 locations were awarded (39 of them have been commissioned). Two years later, new contracts were awarded for an additional 120,650 lines in 147 locations. So far, only 87 of the locations have been affected. Officials say the remaining 60 projects are at various stages of completion.

Government has also been working on a project to install a total of 28,500 lines in mobile stations in 35 locations, out of which only 2,000 have been commissioned in three locations. In 1981, a ₦480 million national telephone network transmission project was embarked upon to link the northern parts of the country with the south. Beneficiaries of contract included Siemens — Elec (German), Mawbeni NEC (Japan) nd ITT (American).

Code-named Phase 11A telephone transmission network the project aims at adding two alternative telephone routes to the existing route, said to be unreliable and unable to cover a wide geographical area. It is also planned to hook up all state capitals, local government headquarters, industrial towns, nd some villages.

Siemens is handling Bendel, parts of Anambra State, Sokoto, Kaduna, Kano, Niger, parts of Borno and the Federal Capital territory, Abuja — a distance of 6,000 kilometres on "microwave radio" link and 300 kilometres on 'coaxial cable' link. It completed work last year. Sources close to the company said work was slowed down on NITEL's advice.

Marubeni, whose area converage includes Oyo, Ondo, Ogun, nd parts of Anambra Stte, completed 99.77 per cent of its projects by January this year. In the same period, ITT completed 75 per cent of its contract whic covers Bauchi, Borno, Gongola, Plateau, Cross River, Imo, parts of Anambra and Rivers.

Officials of the three companies say that NITEL is to blame for the delay in completing the project by its 1983 schedule. They say it has done little to provide infrastructure for equipment now lying idle in warehouses throughout the country.

/9274
CSO: 5500/19

OVERVIEW OF EUROPEAN TELECOMMUNICATIONS INITIATIVES

Amsterdam COMPUTERWORLD in Dutch 29 Jul 86 pp 18, 19

[Article by Jan Schils: "Many New Issues Arise: European Commission Indicates Positive Developments in Telecommunications Policy"]

[Excerpts] Brussels--In a recent European Commission report to the European Council of Ministers about the EEC's telecommunications policy, Europe's "executive committee" notes that considerable progress has been made in the implementation of European telecommunications policy since the second half of 1983. The report includes a current status report in five fields of activity approved by the Council of Ministers.

In the conclusions of its late 1984 meeting, the European Council of Ministers approved the main goals of a European telecommunications strategy aimed at creating the conditions necessary for an expanded common market in telecommunications equipment, internationally competitive industrial structures, and advanced networks and services.

Five Measures

Five kinds of measures were selected to reach these goals:

1. Negotiating the development of telecommunications networks and services within the EEC and implementing joint infrastructure projects.

2. Establishing a European market for telecommunications terminals and terminal equipment.

3. Drafting a program to develop the technology necessary for the long-term construction of future broadband networks.

4. Improving the access of less developed EEC areas to the opportunities offered by the development of advanced services and networks..

5. Coordinating positions during international telecommunications negotiations.

The definition of common goals for the development of telecommunications services and networks in the EEC has been studied by representatives of

network operators, industry, and the European Commission within the Senior Officials Group for Telecommunications (SOGT) and its subgroup, the Group for Analyses and Prognoses (GAP).

The results of these studies and activities of the SOGT and the GAP led to a recommendation to coordinate the introduction of integrated services digital networks [ISDN] in the EEC. This recommendation has been submitted to the Council of Ministers.

Mobile Telephones

A report has been published on second-generation mobile cellular telephone communications, which notes that for the entire EEC demand for mobile phones clearly exceeds supply. The widely divergent systems now in use at the national level are expected to be saturated by 1991.

The report also deals with aspects of personal message services (paging) and telephone systems for rail, air, and road transport. The report has been submitted for examination to the CEPT [European Conference of Postal and Telecommunications Offices]; the PTT administrations, and industry.

The SOGT and the GAP are currently examining the evolution of networks and services toward broadband communications, based on findings of research initiated in 1984 on the main broadband communications connections in the EEC (the TBB or Transnational Broadband Backbone joint infrastructure project). The project's goal is to encourage transnational broadband communications in Europe and initially to put these facilities at the disposal of professional users. These transnational, high-capacity main connections are a step toward the development of integrated broadband communications for general use, one of the objectives of the RACE [R&D in Advanced Communication Technologies for Europe] program.

In addition, the PTT administrations are to accelerate the construction of a mixed European network for broadband transmission (connections via satellites and by land) and the installation of videoconferencing equipment. Most capitals, with the exception of Athens, Lisbon, and Madrid, will be interconnected by this network by mid-1986.

Three subjects are currently being discussed by the European Commission and the network operators: connecting more points, improving user security, and simultaneous interpretation.

Progress has also been made recently in the creation of a European market for telecommunications terminals and equipment.

A short time ago the European Council of Ministers agreed upon common technical specifications.

In July 1985 the European Council of Ministers approved the definition stage of the RACE program. This stage consists in defining the parts needed by a program for telecommunications R&D which seeks to provide EEC industry with the technology necessary to achieve integrated broadband communications (IBC) by 1995.

The first part of the program deals with the development of an IBC reference model and consists of three major themes: networks, terminals, and services.

The second part includes laboratory research contracts with industry in seven fields.

In the meantime, the European Commission has begun reflecting upon the preparation of the first stage of the main RACE program. The first proposal will reach the Council of Ministers in time for a decision to be made before the end of 1986.

Consider

As already noted, the European Commission believes that the European Community should now consider a new series of issues involving organization and regulation in the telecommunications field.

The convergence of telecommunications and data processing causes a clash between two sectors subject to different kinds of regulation: the telecommunications sector, which has traditionally been submitted to stringent regulations, and the data processing sector, which has developed in a competitive climate.

Moreover, this convergence offers almost unlimited opportunities to develop specialized services, thus giving rise to Value Added Network Services (VANS). To be viable these VANS need a market generally larger than the national market alone because they concentrate on small sectors.

Thus, new boundaries have to be drawn between telecommunications and data processing, networks and terminals, network services and other services. Every country has to deal with these problems. All EEC countries have begun a new in-depth study of their own structures. According to the European Commission each EEC country now has to find the most suitable and balanced equilibrium between the increase in scale made possible by digital techniques and the optimal use of the possibilities offered by new telecommunications services. Many conditions have to be met at EEC level: the transition now underway must provide sufficiently large-scale opportunities and the erection of new barriers must be avoided.

Conclusion

In the report's conclusion the European Commission states that the European Council of Ministers can greatly contribute to the creation of the telecommunications sector with a European dimension which is necessary for the coordinated development of advanced telecommunications services and the improvement of industry's position in this field. This may become reality if the Council of Ministers unhesitatingly supports all activities planned within the framework of the European telecommunications policy, if it supports planning at the EEC level on this new area, and if it responds swiftly to specific proposals by the European Commission.

25012/12947
CSO: 5500/A025

NEW CGE-ITT HEAD DISCUSSES STRATEGY, PLANS

Paris LES ECHOS in French 10 Sep 86 p 8

[Article by Valerie Lecasble]

[Text] Pierre Suard, the new head appointed by the French government to set to music the agreement between the CGE and ITT in telecommunications, has remained cool-headed. No flights of fancy or geopolitical strategy for this dedicated but reserved RPR; on the contrary, his words have been slow, thought-out and precise in tone. Barely a month since his appointment, still just beginning to examine the agreement with ITT to which the government "is not opposed" and which has proven to be very complicated to implement, and in the thick of contradictory rumors about ATT's possible interest in the operation, the man has instead been trying to instill calm and has contented himself with giving the broad outlines of his projects for the group.

Pierre Suard wants first of all to reform the structures. "People used to say that the CGE was close to the government. I would prefer people to say now that it is close to its subsidiaries." They are the ones that should "assume responsibility," since the field of operations assigned to the CGE tends to fit naturally into the groups. The desired osmosis will be facilitated by an overlapping of the operations of Alsthom, Alcatel or the parent company. Thus the trend is to lean towards the more operational subsidiaries, with the holding company being more specifically in charge of paving the way for joining the private sector.

Disengagement by ITT in "a Few Years"

"The firm has to be private to conduct large international operations." Pierre Suard does not hide the fact that a verbal contract was already concluded with the government before he was appointed. But he also hopes to reap the benefits for the CGE and thereby help in the financing of the large-scale operation he has started with ITT. And, he hopes to play up the merits of Alcatel stock to the public: "We have been criticized for revaluing Alcatel's assets in the new group established with ITT, but this was not done on CGE's balance sheet." In his view, this then opens up a possibility for increasing their value should the affair with ITT turn out well.

At the end of this procedure, when the Americans pull out as expected, Pierre Suard foresees that the new group will be quoted on the stock exchange. "ITT is committed to maintain a minimum 30 percent participation in the joint venture for a few more years. In my opinion, this should give the corporation enough time to make it presentable to the exchange." According to Pierre Suard, this is how the enterprise is shaping up. "We intend to keep enough weight to be assured of maintaining control."

In the face of current rumors about ATT's possible participation in the operation, the CEO of CGE reiterates a firm denial, insisting that "ATT and ITT are still competitors."

Moreover, he regrets the attitude of Siemens, which was "unhappy to see a French group carry so much weight in Germany through SEL and break the so-called European balance, by CGE's take-over of ITT." And he adds in passing that an agreement with a shareholder across the Rhine (Bosh or Deutsche Bank) has so far not been possible "because the Germans wanted management to be shared on the basis of one-third for CGE, one-third for ITT and one-third for them. This we were not willing to agree to."

He pointed out that the CGE wants "a majority in a joint venture." This does not mean "that there is no place for anyone but not for a large shareholder." One will recall that ITT finally, under pressure from Edouard Balladur, agreed to take 7 percent more in the joint venture, but with the firm intention of reselling it.

Suspensive Clause

As for setting to music the operation that could take shape before the end of the year, Pierre Suard explained further: "In Germany, the Bundespost will keep the same central system." Since the general idea is to respond to invitations to bid as they occur, countries that already have the "System 12" of the American conglomerate should keep it if they wish to. "Our ambition is to do better with Alcatel-ITT than the facade unit that ITT-Europe had with the Americans in Brussels, the Germans in Germany and the Italians in Italy.

Provided, that is, that the affair can be brought to a conclusion without any difficulty. "The agreement between the CGE and ITT has a suspensive clause. Each of the two parties has the right to dissolve the agreement should one of them discover following an inquiry something substantially different (the minimum generally used in the United States is around 10 percent) from what was stated at the time of the negotiations."

9805/12624
CSO: 5500/2403

INTERESTS OF NEW TELECOMMUNICATIONS STUDY CENTER REVIEWED

Paris LES ECHOS in French 17 Sep 86 p 24

[Excerpts] A joint agency, the CCETT [Joint Center for Telecasting and Telecommunications Studies] is one of these pioneering parastate organizations whose role is still somewhat ambiguous. The CCETT is first of all a center for study and applied research. It is responsible nationally for CNET's activities on terminals and interfaces with networks, and uses systems. But it also coordinates in its field the administration's relations with industry, and it holds the national purse strings.

The CCETT (GIE [Economic Interest Group] without its own staff under the dual authority of the PTT and the TDF) employs 400 persons (170 from the TDF and 230 from the PTT), including 240 engineers and technicians in research and 160 in management and logistic services. The two sponsoring agencies share financing on a 50-50 basis. And, they have co-ownership of the results.

Standardization: "Material" Constraints of the Audiovisual Field

Without the aid of subsidies, few firms have dared get involved in marketing up to now. What is the impact of CCETT on this still nascent industry? A burgeoning number of enterprises, subsidiaries or departments of enterprises that want to work with the CCETT. The list is long: SESA and X Com have formed a consortium with Bull to set up a cable network (not open to the public).

Operations are conducted under the EAO national plan. Thomson, the first to embark in the ZIRST [scientific and technical research and innovation zone], FIET, Leroy Electronique, Sofrel, Cap Sogeti, Sesa, and Sema Mitra have introduced important cells in ZIRST to enhance their relationship with the CCETT.

The terminals studied at the CCETT belong to three major families: the terminals to receive television and sound broadcasting signals; videographics terminals; and, alphameric terminals (facsimile or teletex). The CCETT's role is to set standards so that all these terminals can communicate with each other through the various public or private networks.

Along with the new audiovisual communications services, these studies on standards are one of the center's major activities. Research in this field involves both broadcast services (television, data transmission and interactive services (videotex, image consultation services), or intermediate services (televideotheque). Research is also conducted on communication protocols, access techniques, equipment functionality, and its applications and socio-economic viability. The CCETT plays the combined role of industry standardizer and testing center. In short, it is tantamount to a professional technical center responsible for providing technical and scientific guidelines for the profession.

One example is the adoption of the D2-MAC/Paquet standards for radio broadcasting. What is the purpose of all these standards? "Development of software technology and testing. Once the program has been produced, we give it back to the user," Bernard Marti explained.

The second type of activity is in the form of projects carried out in cooperation with users: the image bank completed with Sligos, the multi-media consultation with the Renne hospital center and use of the multi-media audiovideographic data base.

9805/12624
CSO: 5500/2403

BRIEFS

MATRA COMMUNICATION ANNOUNCES SALE--In search of international alliances to compete with the ITT-CGE group in telecommunications, Matra Communications, the telephonics branch of the Matra group in telecommunications, Matra Communication, the telephonics branch of the Matra group doing 1.2 billion in business, is playing its winning cards. Its president, Maurice Remy, has just announced at F39 million contract with Mexico, in a sector where the firm has barely a year's experience: cellular radiotelephonics. This is its first export contract for its Radiocom 2000 system. This microwave broadcasting system will be manufactured jointly at Chateauroux by Matra and the Finnish company Nokia-Mobira (the number one European firm in cellular radiotelephone systems), which have just formed a 50-50 corporation. Expected sales for the first year are F150 million [Text] [Paris LE NOUVEL ECONOMISTE in French 12 Sep 86 p 86] 9805/12624

CSO: 5500/2403

EUROPEAN DBS SIGNAL DISTRIBUTION DESCRIBED

Milan ALTA FREQUENZA in English No 2, Mar-Apr 86 pp 105-111

[Text] 1. Introduction

Receiving and distribution installations of television signals in a building or apartment block (the so called: community antenna installations or systems) are widely used in Europe, particularly where large cable TV systems (CATV systems) are not installed or very few TV users are served.

These installations, up to now used for terrestrial broadcast signals only, should evolve in the near future in order to be able to receive and distribute the signals directly broadcast by satellite (DBS) in the 12 GHz band.

The structure and characteristics of these new receiving and distribution installations of television signals should take into account not only the planning of the 12 GHz band, done by the WARC-BS in 1977 (see Appendix), which considered the use of the existing color television systems (PAL and SECAM), but also the decision of EBU (European Broadcasting Union) in 1984 to propose the "C-MAC packet" system (1) as an unified television system for DBS in Europe and the recommendations of the CCIR (Comite Consultatif International Radio) at the last meeting in Geneva, 1985, concerning the family of "MAC packet" systems for DBS and cable distribution systems.

In fact, the constraints imposed by cable distribution in very large systems (CATV) has led to the proposal of duobinary coding (D-MAC) the digital multiplex (20.25 Mbit/s) carrying audio and data signals and also to reduce the bit rate to a half (D2-MAC), in order to obtain a channel width of 10.5 MHz (D-MAC) or 7 MHz (D2-MAC), when the remodulation in AM- -VSB is performed at the head-end of the CATV system.

Therefore, it seems obvious that the reception and distribution techniques for DBS signals should primarily allow the users to enjoy the enhanced quality and quantity of the signals transmitted by satellite using the new television systems.

Moreover, considering that a community antenna installation has a number of users (usually less than 100) much smaller than a CATV system, the following technical conditions and economical constraints, mainly related to the differences between satellite broadcasting and terrestrial broadcasting, concerning both the carrier modulation (FM (2) instead of AM-VSB) and the video and audio signals coding ("MAC packet" family systems instead of PAL or SECAM), must also be taken into account:

a) in the head-end of the community antenna installation, FM demodulation and AM-VSB remodulation, MAC decoding and PAL or SECAM encoding, must be avoided to reduce cost and obtain full transparency in the distribution system; therefore, only frequency conversion is desirable and is suggested to be used;

b) during the pre-operational part of the DBS service, the existing distribution network to a community antenna installation can be used to distribute a small number of DBS channels; this will allow the users living in an apartment block to have access to DBS signals at a very low cost and avoid the installation of individual DBS receiving systems;

c) the TV receivers used in individual or community antenna installations should have video and audio base-based inputs ("peritelevision" socket); otherwise, in front of the user's TV set provided with an r.f. input socket only, MAC decoding and PAL or SECAM encoding and also AM-VSB remodulation of a VHF/UHF carrier should be provided; although this signal processing will reduce the receiver quality, the user will be allowed to replace in the future its TV set with a new one, able to provide the whole quality and quantity of DBS signals.

2. Reception and Distribution Techniques for DBS Signals

In figure 1 is indicated the general structure of a community antenna installation.

The functions performed by the various blocks are described below.

In particular, the configuration of the interfaces A and B depends on the distribution technique used.

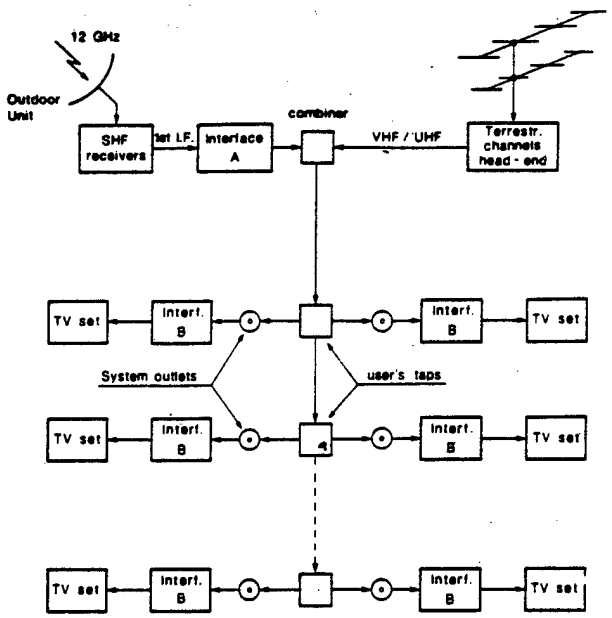

Fig. 1 - Typical structure of a community antenna installation for terrestrial and satellite broadcasting. The configuration of interfaces A and B depends on the distribution technique for DBS signals used.

2.1 Reception

The signals transmitted by satellite in the 12 GHz band (see Appendix for channels allocation and assignment to the various countries), are first received using the Outdoor Unit (that is, a suitable antenna and a SHF receiver) performing the conversion to the 1st I.F. band (0.95-1.75 GHz) (3) and then sent to the user's receiving apparatus by means of a cable or a distribution network.

The user's receiving apparatus should be able to tune all the channels in the 1st I.F. band, to demodulate the signals at the 2nd I.F. (4) (27 MHz bandwidth), to decode video and audio signals, in order to obtain base-band video and audio outputs, to be applied to the TV receiver, provided with video and audio inputs ("peritelevision" socket). Otherwise, PAL or SECAM encoding and also AM-VSB remodulation of a VHF/UHF carrier must be provided. In figure 2 a FM-PSK turner, for DBS signals coded according to the "C-MAC packet" system, is indicated.

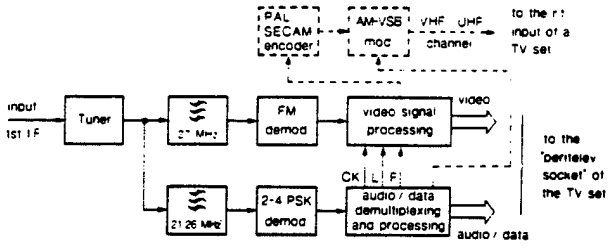

Fig. 2 - Block diagram of the user's receiving apparatus (FM-PSK tuner for DBS signals coded according to the "C-MAC packet" system) that must be used in front of a TV set; in the future this apparatus will be included in the TV set itself.

2.2 Distribution

Taking into account the technical conditions and economical constraints listed above, the following distribution techniques are here proposed:

a) distribution in the 1st I.F. band (0.95-1.75 GHz) of up to 20 FM channels spaced 38.36 MHz, without changing the r.f. modulation parameters of DBS signals. A suitable channels allocation in the 1st I.F. band is indicated in Table 1; in this case the interface A (figure 3) uses channel converters and band-stop filters to allow the selection of the DBS channels to be distributed. The interface B is the user's receiving apparatus (e.g. the FM-PSK tuner of figure 2) and is followed by the TV set. This unit will be included in the future TV sets.

b) distribution in the extended super-band (230-470 MHz) of up to 6 FM channels, spaced 38.36 Mhz, without changing the r.f. allocation is indicated in Table 2.
In this case the interface A (figure 4) uses channels converters (up to 6) to transfer the wanted channels from the 1st I.F. band to the 230-470 MHz band.

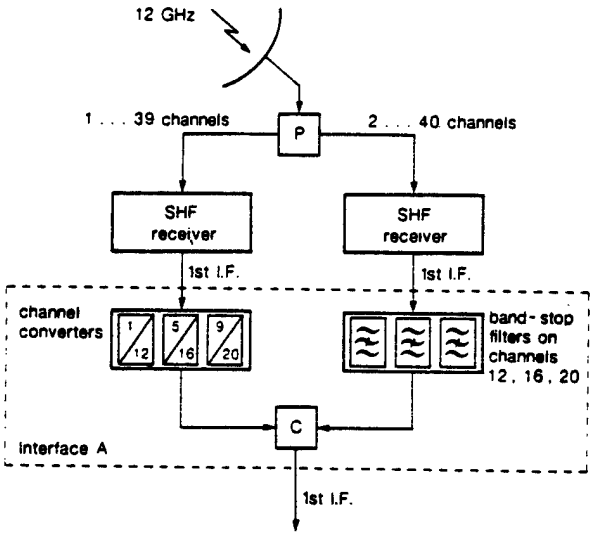

Fig. 3 - Example of interface A for the distribution technique of DBS signals in the 1st I.F. band (0.95-1.75 GHz). Channel converters and band-stop filters are used to select and combine the 20 wanted channels among those (up to 40) received by each satellite orbital position. In this example, the French channels 1,5 and 9 are converted and distributed in place of the Austrian channels 12,16 and 20, supressed by the band-stop filters.

P: polarizer and orthomode transducer (OMT), C: combiner.

Table 1 - Channels allocation in the 1st I.F. band (0.95-1.75 GHz)

Channel N.	Carrier frequency (MHz)	Channel N.	Carrier frequency (MHz)
1	977.48	2	996.66
3	1015.84	4	1035.02
5	1054.20	6	1073.38
7	1092.56	8	1111.74
9	1130.92	10	1150.10
11	1169.28	12	1188.46
13	1207.64	14	1226.82
15	1246.00	16	1265.18
17	1284.36	18	1303.54
19	1322.72	20	1341.90
21	1361.08	22	1380.26
23	1399.44	24	1418.62
25	1437.80	26	1456.98
27	1476.16	28	1495.34
29	1514.52	30	1533.70
31	1552.88	32	1572.06
33	1591.24	34	1610.42
35	1629.60	36	1648.78
37	1667.96	38	1687.14
39	1706.32	40	1725.50

Table 2 - Channels allocation in the 230-470 MHz band

Channel N.	Carrier range (MHz)	Carrier frequency (MHz)
FM1	235.84 - 262.84	249.34
FM2	274.20 - 301.20	287.70
FM3	312.56 - 339.56	326.06
FM4	350.92 - 377.92	364.42
FM5	389.28 - 416.28	402.78
FM6	427.64 - 454.64	441.14

The interface B (figure 5) is a block converter able to transfer all the channels distributed in the 230-470 MHz band in a suitable part of the 1st I.F. band. These channels are then turned by the user's receiving apparatus (e.g. the FM-PSK tuner of figure 2) which is included in the TV set or is added in front of it.

3. Evolution of the Community Antenna Installations

The possible evolution of the community antenna installations from terrestrial broadcasting to satellite broadcasting is foreseable in two steps.

During the pre-operational DBS service, the distribution technique (b), described in par. 2.2, can be applied to the existing community antenna installations, using their passive distribution networks to distribute a selection of up to 6 DBS channels or at least the 5 national DBS channels, if all available from satellite.

Subsequently, when a large number of DBS channels will be available, the technique (a), described in par. 2.2, can be used to distribute up to 20 DBS channels.

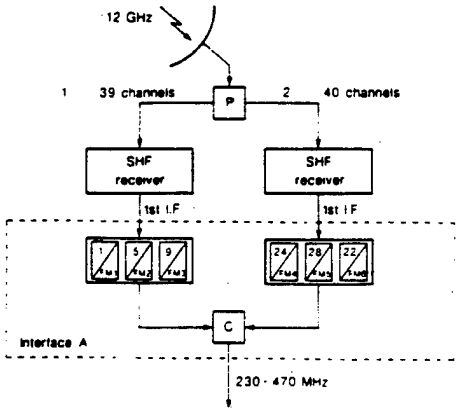

Fig. 4 - Example of interface A for the distribution technique of DBS signals in the 230-470 MHz band. In this example the French channels 1,5 and 9 are converted in the 230-470 MHz band.
P: polarizer and orthomode transducer (OMT). C: combiner.

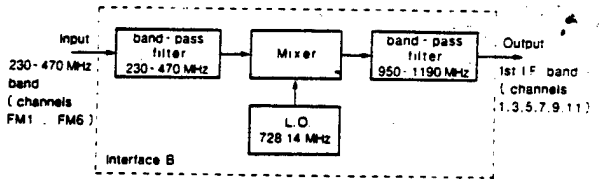

Fig. 5 - Example of interface B for the distribution technique of DBS signals in the 230–470 MHz band. The channels FM1 to FM6 (see Table 2) are converted all together (block converter) from the 230–470 MHz band to the 1st I.F. (channels 1,3,5,7,9 and 11).

Because frequencies up to 1.75 GHz are distributed in this case, a complete new distribution system should be designed and installed, using suitable criteria and apparatus.

It is very important to take into account that the two techniques described above do not exclude each other, but are fully complementary; in fact, when used together, these two techniques can allow the distribution of up to 26 DBS channels.

The most suitable and economical way to obtain a capacity of 26 DBS channels is to distribute all (up to 20) DBS channels, having the same polariziation as the national ones, using the technique (a) described in par. 2.2, and a selection of up to 6 DBS channels having the opposite polarization, using the technique (b) described in par. 2.2.

In figure 6 is indicated an example applicable to the north of Italy, Switzerland and Austria, where 20 DBS channels, received with the left-hand circular polarization, are distributed using the technique (a) described in par. 2.2.

The 5 French DBS channels, right-hand circular polarized and also received with a high level (using the same antenna dish of about 0.9 m diameter), are distributed using the technique (b) described in par. 2.2.

Similar situations can apply to other european countries [ref. 4].

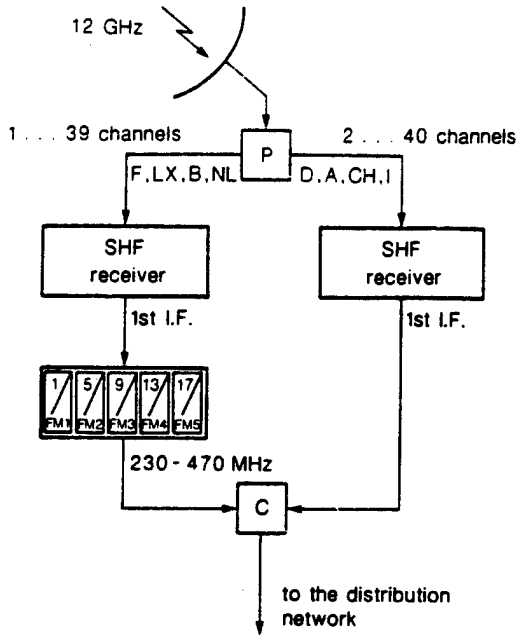

Fig. 6 - Example of the combination of the two distribution techniques (in the 1st I.F. band and in the 230-470 MHz band) applicable in Italy, Austria and Switzerland to obtain the capacity of 25 DBS channels, that is the 20 channels received on the left-hand circular polarization (even channels) and the 5 French channels (1,5,9,13,17) received on the right-hand circular polarization and distributed in the 230-470 MHz band.
P: polarizer and orthomode transducer (OMT), C: combiner.

4. Electrical Characteristics

Considering the levels of the received signals (see ref. 4,5), the channels allocation in the 12 GHz band (see Appendix) and the modulation parameters planned in the WARC-BS77, taking also into account the new family of "MAC packet" coding systems, it is possible to derive the main characteristics of the receiving system (outdoor unit, user's receiving apparatus and distribution network) in order to obtain a good received signal quality.

The most important characteristics of the Outdoor Unit, which are mainly related to the SHF receiver, following the antenna and the polarizer, are indicated in Table 3.

It is very important that the user's receiving apparatus be designed according to a set of main characteristics, listed in Table 4, which will assure a good reception quality, though using apparatus made by different manufacturers.

Taking into account the characteristics indicated for the above parts of the receiving system, which are essentially those to be used for individual reception, the main characteristics of the distribution network have been derived and indicated in Table 5. These values are applicable to both the distribution techniques (a) and (b), described in par. 2.2.

The characteristics given above should be maintained in the environmental conditions listed below:

-Humidity: 0 percent to 95 percent.
-Temperature range: -30 C to +50 C for Outdoor Unit
-10 C to +50 C for the distribution network and user's receiving apparatus.

Table 3 - Outdoor unit (antenna and SHF receiver)

Characteristics	Values
-Input frequency range	11.7 - 12.5 GHz
-Image frequency attenuation	>90 dB
-Stability of the L.O. frequency (10.75 GHz)	1.5 MHz
-Maximum radiated power at the L.O. frequency	-42 dBm
-Output frequency range (1st I.F.)	0.95 - 1.75 GHz
-Output nominal impedance	75 ohm
-Output reflection coefficient	<0.2
-Minimum output signal level for each channel	-45 dBm
-Maximum output signal level for each channel	-30 dBm
-Amplitude/frequency response within a channel	-1.5 dB
-Figure of merit (G/T)	>6 dB
-Intermodulation (2-tone intercept point level referred to the input level)	>-28 dBm

Table 4 - User's receiving apparatus

Characteristics	Values
-Input frequency range	0.95 - 1.75 GHz
-Input nominal impedance	75 ohm
-Input reflection coefficient	<0.3

-Minimum input level	-55 dBm
-Maximum input level	-30 dBm
-Video output impedance	75 ohm
-Video output amplitude	0.7V to 1.4V
-Audio output impedance	600 ohm
-Audio output amplitude	0.3V to 0.5V
-Noise figure	<12 dB
-Noise threshold	<10 dB
-Selectivity:	
protection ratio at: 18.19 MHz	< 15 dB
protection ratio at: 38.36 MHz	<-17 dB
protection ratio at the image frequency	<-17 dB

Table 5 - Distribution network

Characteristics	Values
-Nominal impedance	75 ohm
-Reflection coefficient	<0.3
-Minimum output level for each channel	-55 dBm
-Maximum output level for each channel	-30 dBm
-Amplitude/frequency response within a channel	1.5 dB
-Isolation between outlets	>30 dB

5. Conclusions

The distribution techniques for DBS signals described above are able to provide an acceptable technical solution to the problems arising when introducing DBS signals in the community antenna installations.

The possibility to combine the two distribution techniques described above is very important in order to obtain an economical way to transform the existing community antenna installations, designed to distribute the terrestrial broadcasting signals only, in new installations able to handle both terrestrial broadcasting and satellite broadcasting signals.

Preliminary tests (see ref. 7) have shown that these distribution techniques can be applied to small community antenna installations.

It is also very important to note that the above distribution techniques do not require the use of demodulators, decoders, modulators and encoders, which are very expensive and of careful maintenance, but only require amplifiers and converters, which have a lower cost and are able to assure the complete transparency of the community antenna installation to the coding and modulation systems used by satellite broadcasting.

Appendix

The planning of the 12 GHz band (11.7-12 GHz) for the direct broadcast satellite service has been done by the World Administrative Radio Conference on Broadcasting Satellite in 1977 (WARC-BS77).

At least 5 DBS channels have been assigned to each country for transmission from a suitable geostationary orbital position.

The channels planning has been obtained considering the peculiar characteristics of the circular polarization, which allows a partial overlapping of channels having opposite polarization directions.

Therefore, the distance between channels, having a bandwidth of 27 MHz each, has been reduced to 19.18 Hz, and 40 channels, whose carrier frequencies are indicated in Table A.1, have been assigned to each orbital position.

The minimum power flux level receivable inside the service area covering each country is - 103 dB(W/m); this value is based on a carrier-to-noise ratio (C/N) higher than 14 dB at the input of the FM demodulator (giving a picture quality of grade 3.5), achievable with a receiving system having a figure of merit (G/T) of 6 dB(K), that means a receiving antenna with a paraboloidal dish reflector of 0.9 m and an overall noise figure of 7 dB.

The channels assignment to the various European countries is indicated in Table A.2, where the orbital position and the circular polarization assignments are also indicated.

Table A.1 - Channels allocation in the 12 GHz band (11.7-12.5 GHz)

Channel N.	Carrier frequency (MHz)	Channel N.	Carrier frequency (MHz)
1	11727.48	2	11746.66
3	11765.84	4	11785.02
5	11804.20	6	11823.38
7	11842.56	8	11861.74
9	11880.92	10	11900.10
11	11919.28	12	11938.46
13	11957.64	14	11976.82
15	11996.00	16	12015.18
17	12034.36	18	12053.54
19	12072.72	20	12091.90
21	12111.08	22	12130.26
23	12149.44	24	12168.62
25	12187.80	26	12206.98
27	12226.16	28	12245.34
29	12264.52	30	12283.70
31	12302.88	32	12322.06
33	12341.24	34	12360.42
35	12379.60	36	12398.78
37	12417.96	38	12437.14
39	12456.32	40	12475.50

Table A.2 - Channels assignment to the European countries

Satellite	Orbital pos.	Polar	Channels
West Germany		2	2 6 10 14 18
Austria		2	4 8 12 16 20
Switzerland		2	22 26 30 34 38
Italy		2	24 28 32 36 40
France		1	1 5 9 13 17
Luxemburg		1	3 7 11 15 19
Belgium		1	21 25 29 33 37
Netherlands		1	23 27 31 35 39
Poland		2	1 5 9 13 17
Czechoslovakia		2	3 17 11 15 19
D.D.R.		2	21 25 29 33 37
Hungary		1	22 26 30 34 38
Finland		2	2 6 10 22 26
Sweden		2	4 8 34 30 40
Norway		2	14 18 38 28 32
Denmark		2	24 28 32 36 40
United Kingdom		1	4 8 12 16 20
Ireland	-31	1	2 6 10 14 18
Spain		2	23 27 31 35 39
San Marino		1	1 5 9 13 17
Liechenstein		1	3 7 11 15 19
Monaco	-37	1	21 25 29 33 37
The Vatican City		1	23 27 31 35 39
Jugoslavia	-7	1	21 25 29 33 37

1 = Right-hand circular polarization (clockwise)
2 = Left-hand circular polarization (anticlockwise)

(1) The "C-MAC packet" system (MAC: Multiplexed Analogue Components) differs from the conventional TV systems (PAL and SECAM) because the luminance and chrominance components (time compressed in a 1.5:1 (luminance) and 3:1 (chrominance) ratio) are time multiplexed with the digital multiplex, running at 20.25 Mbit/s and carrying up to 8 audio and/or data signals.

(2) The "C-MAC packet" system uses FM modulation for video signal and 2-4PSK for audio and data signals (digital multiplex).

(3) The 1st I.F. band, ranging from 0.95 GHz to 1.75 GHz, is generally agreed to be a suitable approach for the design of the new DBS receivers, but is not standardized by CCIR or IEC.

(4) The 2nd I.F. also is not yet standardized; suitable values can be obtained considering the problems arising from the local oscillator and image frequency interferences. Two values can be used:
a) 134.26 MHz (7 times the DBS channels spacing of 19.18 MHz);
b) 441.14 MHz (23 times DBS channels spacing of 19.8 MHz).
Both values can avoid the local oscillator interference, if only odd or even DBS channels are distributed in the system.
The second value avoids the image frequency (channel) to be a channel inside the 1st I.F. band (800 MHz wide).

8600
CSO: 5500/M281

TELEFONICA PLANS NATIONAL FIBER OPTIC CABLE SYSTEM

Madrid EL PAIS in Spanish 26 Sep 86 p 29

[Article by Milagros P. Oliva]

[Text] Barcelona. At Barcelona's Palace of Congresses, 900 specialists from all over the world are taking part in the 12th European Optical Communications Conference. The latest research in this field, destined to become the axis of future communications systems, has been presented at this conference. Before 1990 Spain will have an optical fiber cable system which will link the 50 provincial capital cities of Spain.

Organization of the conference this year was Spain's responsibility; the chairmanship of the steering committee was assumed by Enrique Used Aznar, commercial director of Telefonica, and the chairman of the technical committee was Professor Jose Antonio Martin Pereda from Madrid's Politecnica University.

According to Enrique Used, Spain began its work with the applications of this technology a little late, but it has moved ahead so quickly that within a few years it should reach the level of the most advanced European nations. The first optical fiber link between a lab and a Telefonica terminal was installed in 1980.

The development of optical communications in Spain has moved forward with the laying of an undersea optical fiber cable between the Santa Cruz de Tenerife and Las Palmas islands in 1985, and the approval of a specific plan to be carried out by Telefonica. The objective of this plan is to provide a national long-distance, high-volume optical communications network which will be connected with the international network, and the laying of cable between Spain's major cities to facilitate urban communications.

As Enrique Used reported at the opening of the conference, Telefonica plans to connect Spain's major cities with optical fiber, including the 50 provincial capitals, before 1990. The first step of this project is the laying of a cable between Barcelona and Madrid, which has already begun.

Spain's six major cities should have optical fiber communications by the end of 1988, with a direct digital system which will be offered as a service for institutions and businesses wishing to subscribe. At that time, if the schedule is met, there will be 3,000 kilometers of optical fiber cable, reaching 9,000 kilometers in 1990.

Enrique Used reported that Spain is also participating in four major international projects, including the creation of a Mediterranean undersea cable network called TAT-9, and in a number of European Community projects. Spain also plans to use submarine cable to link the Balearic and Canary Islands with continental Spain.

A Qualitative Leap

Spain's qualitative leap forward in the development of this technology was made evident by the larger number of Spanish papers accepted for presentation at this congress. The paper selection system is extremely rigorous, and only very innovative and highly technical research papers are chosen. At the congress held 2 years ago, no Spanish papers were given. At last year's conference one paper from Spain was accepted, while this year a total of six papers were chosen, four from industry and two from universities.

The congress, which was first held in 1975, is held every year in a different country in Europe, with the exception that every 2 years it must be held in one of the five pioneering countries: France, the Federal Republic of Germany, Italy, the United Kingdom, and Holland. Nevertheless, the country which has presented the largest number of papers is Japan, with 35, followed by the United Kingdom with 21, and the FRG with 15. The United States, with 10 papers selected, has a smaller representation at this conference than its technological potential would seem to warrant. The cause apparently lies in the Americans' reluctance to travel in Europe, for fear of being the target of terrorist attacks.

7679
CSO: 5500/2415

ANTENNA REQUIREMENTS FOR CHANNEL 2

Istanbul CUMHURIYET in Turkish 12 Sep 86 p 16

[Text] Ankara--Electronic instrument manufacturers suggest that consumers opt for the heaviest and the least expensive types of antenna for Channel 2 broadcasts. They also advise that the highest quality cable be chosen for the new antennas.

Stating that there is a direct relationship between an antenna's physical size and its quality, the manufacturers said: "The physical dimensions of antennas built in Turkey are not of original design, but copied from antennas manufactured abroad. That is why there is no significant difference of quality between antennas built abroad and those manufactured in Turkey, nor is there much difference among antennas built in Turkey." Stating that the amount of aluminum used in the building of an antenna is one of the most important factors affecting the quality of an antenna, the manufacturers said: "The use of very thin aluminum in these antennas, which are built for ultra high frequency [UHF] reception, degrades the antennas' quality. Some manufacturers are using less aluminum to cut their costs. Consequently, those who need to buy new antennas for Channel 2 must determine whether sufficient aluminum has been used to ensure that they are getting high-quality antennas." Stating that to measure the quantity of aluminum used in an antenna, one must check the cross-section and the length of the antenna elements, the experts said:

"If the ends of the antenna elements have not been capped with a plastic plug then the cross-section of the elements can be easily seen. If that cannot be done, the easiest way to see whether thin aluminum has been used is to check the weight of the antenna. For antennas of similar size, the heaviest one should be chosen."

The experts said that if thin aluminum is used in UHF antennas, the reception of ultra high frequencies will not be good and the TV picture will be fuzzy and that the antenna will have a shorter lifetime because of faster oxidization.

The experts said that, since there is no significant difference of quality among domestically manufactured antennas, the least expensive of the available

UHF antennas--whose prices vary betweeen 10,000 and 20,000 Turkish liras--should be bought and added that no advantage would be gained from buying an expensive antenna.

Stating that a new antenna is not absolutely necessary to watch Channel 2 broadcasts, the experts said:

"A second antenna may be necessary in low-lying areas and in the distant suburbs of the city. However, existing antennas may be adequate in areas where the signal quality is good. In fact, generally speaking, most cities have good reception. Consequently, there is no need to buy very large antennas, and it is not absolutely necessary to install the antennas on building roofs. In places where TV reception is good, small antennas may be sufficient."

Stating that, if an antenna is bought for Channel 2, the way the two antennas are connected together is very important for good reception, the experts said that, if a single cable is to be used, the two antennas cannot be connected in parallel directly and that an impedance transformer is needed between the two.

Stating that the distance of the two antennas from each other is also important in the connection of the two antennas together, the experts said that the two antennas must be placed vertically over each other at a distance of 50 to 75 centimeters from each other. Stating that composite antennas which can receive both VHF broadcasts on Channel 1 and UHF broadcasts on Channel 2 are not practical, the experts said:

"These wideband antennas are not very sensitive. The reception quality of these antennas is much lower than the others. When broadcasts are received from both the VHF and UHF bands, the signal quality is degraded. That is why each individual must determine whether he has good reception with his existing antenna. If his existing antenna cannot receive Channel 2 broadcasts then a wideband antenna would also be inadequate. It would be necessary to buy a second antenna. Wideband antennas are adequate in areas where the broadcast signal is strong."

Noting that low-lying areas and regions too far from transmitter towers are unlikely to have good TV reception, the experts said that residents of such areas would not gain much by buying larger antennas or by placing them in higher locations.

9588
CSO 5500/2408

RADIOLINK SYSTEM WITH IRAN PLANNED

Istanbul HURRIYET in Turkish 20 Aug 86 p 14

[Text] Erzurum, HURRIYET News Agency--Iran will conduct its telephone and telex communications with the world through Turkey in the future, if an agreement currently under discussion is finalized. From the moment a 3,000 subscriber radio-link system planned to be set up in Agri goes into service, Turkey will be earnig a revenue of millions of lira a day.

According to the Iranian Consulate General in Erzurum, representatives of the two countries met at the Turkish-Iranian border to discuss this topic. Delegations from Iran, the Turkish Post, Telephone and Telegraph Administration [PTT] and the Turkish Communications Ministry arrived at an agreement on the subject of establishing two radio-link systems.

According to the agreement, one of the radio-link system will be at Maku in Iran. This will enable Turkey to have improved communications links with Far Eastern countries. Iran, in turn, will be able to have communications with all countries of Europe and the world through the radio-link system planned to be built in Dogubayazit District of Agri Province. To establish whether the planned system will work smoothly, a 6-line system each way shall be built between Gurbulak and Bazargan any day now.

Iran which currently channels its communications with the world through Italy, shall pay Turkey a substantial telecommunications fee after the system in question goes into service. The sum involved will rise further if the volume of traffic increases. Turkish PTT officials have said that the annual revenues could come to around 150 billion Turkish lira (or about $210 million).

13184/12951
CSO: 5500/2401

BRIEFS

ELECTRONIC TRADE AGREEMENT WITH USSR--Mepa Central Marketing Inc, backed by the Turkish Is Bank, signed a cooperation agreement with the USSR electric, electronic and electromagnetic trading firm of Shpribornintorg. Under the agreement signed last week, Mepa will act as the Soviet firm's agent for its exports to Turkey and imports from Turkey. The cooperation agreement will bring to the Turkish market such Soviet products as Soviet made electric and electronic devices, electronic circuit elements, test equipment, meteorological equipment, rainmaking and hail prevention systems and natural gas network equipment. The agreement also includes the sale to the Soviets of various communications equipment (telephone exchanges, telex machines, radiolink and modern systems) from Turkey. [Text] [Istanbul DUNYA in Turkish 9 Sep 86 p 3] 8349

SATELLITE TV TRANSMISSIONS--The Council of Ministers decided today to set up 29 high power transmissions to enable viewers to pick up television's second channel everywhere in Turkey within the framework of the 1986 economic program. The project on satellite television transmission was also included in this year's program. [Excerpt] [Ankara Domestic Service in Turkish 1700 GMT 5 Nov 86 TA] /9738

BROADCASTING UNION MEMBERSHIP--Turkish Radio and Television Director General Tunca Tuskay has been elected the deputy chairman of the Asian Pacific Broadcasting Union,ABU. Turkey was reelected to serve as a member of ABU's executive council for another three years. [Excerpt] [Ankara Domestic Service in Turkish 1700 GMT 5 Nov 86 TA] /9738

CSO: 5500/2419

END